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## PROVISIONAL APPLICATION FOR PATENT COVER SHEET

Docket No. BLASC/1A Type a plus sign (+) +  
inside box

## INVENTOR(S)/APPLICANT(S)

LAST NAME	FIRST NAME	MIDDLE INITIAL	RESIDENCE (City & Either State or foreign Country)
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## TITLE OF THE INVENTION (280 characters max)

SUBWAY TV MEDIA SYSTEM

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## ENCLOSED APPLICATION PARTS (check all that apply)

<input checked="" type="checkbox"/> Specification	<u>9</u> Number of Pages	<input type="checkbox"/> Small Entity Declaration
<input checked="" type="checkbox"/> Drawings	<u>7</u> Number of Sheets	<input checked="" type="checkbox"/> Other (Specify) (unsigned small entity decl.)

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FOR PATENT (check one)**

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- ☒ No
- ☐ Yes, the name of the U.S. Government agency and the Government contract number are:  
\_\_\_\_\_

Respectfully submitted,

SIGNATURE:

Robert G. Hirons

TYPED OR PRINTED NAME: Robert G. Hirons

REGISTRATION NUMBER: 24,666

DATE: May 6, 1997

☐ Additional inventors are being named on separately number sheets attached hereto.

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U.S.A. Provisional Patent Application

Inventor: SCOTT BLAIR  
Applicant: SCOTT BLAIR  
Title: SUBWAY TV MEDIA SYSTEM

60045831-050797

## SUBWAY TV MEDIA SYSTEM

5 This invention relates to video display systems, and more specifically to video display systems mounted in and operating in mass transit subway cars.

10 It is commonplace to provide visual advertising displays such as posters in mass transit subway cars, where the displays are available for reading by subway passengers during travel. It is also known to equip subway cars with closed circuit television cameras, for surveillance of passenger behaviour and other safety checks. Images of such surveillance are either displayed at a central security facility, or recorded for subsequent viewing in the event of safety problems.

15 It is also commonplace to equip subway cars with audio public address systems for a myriad of uses, including transit service announcements, community service events, advertising, safety and emergency procedures, as well as inter-staff communications.

20 Proposals have been made previously to equip other transportation items, especially aircraft, with television or video systems, primarily for the entertainment of passengers on long journeys. Examples of such systems in the patent literature can be found in U.S. Patent 4,647,980 Steventon et al., U.S. Patent 4,630,821 Greenwald, U.S. Patent 4,352,124 Kline, U.S. Patent 5,123,728 Gradin et al., and U.S. Patent 3,457,006 Brown et al.

25 According to the present invention, from one aspect, there is provided a video system for displaying televised material to passengers in a mass transit subway car, and comprising at least one video display monitor adapted for mounting inside a subway car so as to display televised

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materials to passengers riding therein, and a video signal source unit operatively connected to said at least one monitor.

5           According to a second aspect of the present invention, there is provided a subway car for mass transportation and comprising a video display system including at least one video display monitor having a video screen, the monitor being mounted in the subway car in a manner such that  
10       the video screen thereof is readily visible to passengers in the subway car, and a video signal source unit operatively connected to said at least one monitor.

15           The term "video signal source unit" as used herein embraces player units for playing pre-recorded video material, such as video tape players and video disk players, and television receivers for receiving broadcast television signals from a remote transmitter and supplying these to the video display monitors mounted in the subway cars. The  
20       preferred system according to the invention utilizes receivers for receiving broadcast television signals from a remote transmitter as the video signal source unit. Such video signal source unit can be located either within the mass transits' premises or on a remote broadcasting site.  
25       Alternatively, the invention utilizes a video tape or video disk player as the video signal source unit. The video signal source unit may be located in the same subway car as that in which the monitor or monitors are located, or in adjacent or remote cars of the same train, with the necessary operative  
30       connection between the player and the monitor(s). An individual subway car can be equipped with its own video signal source unit, connected to a plurality of monitors mounted at different, appropriately chosen locations along the length of the subway car. Alternatively, one central video

signal source unit can be located in one car of subway train, and connected to monitors in some or all of the cars of the train, to provide a central video signal source unit for the train.

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The video signal source unit and video display monitors used in the present invention can be of known, standard form, obtainable as off the shelf items from manufacturers and sales outlets. The connections between them, for display of televised material, are also standard and well within the skill of the art. For example, use can be made of the existing subway infrastructure by which audio announcements are currently transmitted. Alternatively, the connections may be by use of coaxial cables, fibre optics, cell phone systems or satellite transmission, or by other appropriate means. Coaxial cable connections are preferred.

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The video system according to the present invention provides a means for communicating a very wide range of information to viewers in an environment ideally suited to communicating short video messages to viewers, especially commercial messages or sponsored community service, or informational news bytes. Most subway rides are of short duration, e.g. 15 minutes or less. It is normally undesirable to play television programs of any significant length to subway passengers for fear of distracting them from their proper points of interchange and disembarkation on the subway system. However, the system according to the invention is ideally suited for displaying a series of short, 30 second - 1 minute messages, in sequence, such as a series of commercial messages. These can range from straightforward advertising as seen on commercial television, or the type of news feed with corporate sponsorship as seen by cable television viewers, with news services provided by specialized companies in this

business. If the information is delivered by video tape or video disk player, it can be repeated at intervals of, say, 5-10 minutes, based upon the average duration of individual subway rides. If the feed is delivered from an outside source, its delivery depends on the package of the server, and according to agreement between the purchaser and the mass transit management, and other interested parties as necessary.

Typically, the television images displayed by the monitors of the system according to the invention do not incorporate sound, though they may contain rolling script, similar to cable television news channels, or similar to closed-captioning for the hearing impaired. This avoids risk of interference with announcements being played to passengers through the normal audio address system carried by the subway train, and avoids adding to the general noise level experienced by passengers on the subway cars, a noise level which is commonly quite high even under normal running conditions. However, sound may be incorporated where appropriate, for example in safety or emergency situations, or to mark the beginning of a message to which the subway or transmission provider wishes to call attention.

The manner in which the video display monitors are disposed and mounted in the subway car depends to some extent on the design of the subway car itself. Such designs can vary between different subway systems. Normally from 6-12 such colour monitors are provided in each subway car, suitably of 12"-13" size, spaced along the length of the car, and disposed above the windows of the car, in a manner and at a location which does not interfere with the operation of any other essential element of the car (door operation, lights, heating, air conditioning etc.). A subway car is normally constructed so that it has a cavity wall, defined between its outer



structural shell and its inner lining wall, the cavity providing for wiring and cables and other mechanical functions, and, at places, containing insulation. The video display monitors in the system of the invention are suitably mounted in the cavity wall.

In a preferred arrangement, the video display monitors have a strong metal frame construction, fixed to the frame of the subway car. The screens are preferably covered with a rigid transparent unit, e.g. of polycarbonate, shaped to coincide with the shape of the internal wall of the subway car at the location of mounting. For example, when the monitor is mounted at the junction of the wall and ceiling of the subway car, where there is commonly provided a concavely curved segment of internal wall, the transparent cover unit is suitably similarly concavely curved, so that it can be mounted as a continuum with the internal walls and blended to contours thereof, with the monitor mounted behind it. The screen is suitably angled downwardly, for best viewing by passengers seated opposite the screen. The entire structure of the monitor, including the cover unit if used, is suitably housed in a stainless steel or strong plastic casement, designed to appear integral with the subway car, without visible edges or protuberances, and matching the materials and colours of the subway car interior.

Specific preferred embodiments of the present invention are illustrated in the accompanying diagrammatic drawings in which:

Figure 1 shown in plan view (Fig. 1A) and in side elevation (Fig. 1B), an existing subway car as used on the Toronto Transit System with indications of appropriate

locations for mounting video monitors according to the invention;

5 Figure 2 is a sectional view of a subway car according to the invention with video monitors in place;

10 Figure 3 is a detailed, in section, of an existing subway car illustrating the location for receiving a video monitor according to the invention;

15 Figure 4 is a detail similar to Fig. 3, with the video monitor in place;

20 Figure 5 is a detail in perspective view, of a subway car equipped with a monitor according to one embodiment of the invention;

25 Figure 6 is a detail similar to Fig. 5 but of an alternative embodiment;

30 Figure 7 is a view similar to Figure 6, showing the general appearance when the monitor is operating.

A typical subway car 10, as illustrated in Figs. 1A and 1B, is equipped with sliding doors 12 and windows 14, spaced at convenient intervals along the length of the car. Passenger seats, in sets of 2's and 3's, are disposed beneath and alongside the windows 14, clear of the doors 12, some sets 16 being inward facing, other sets 18 being forward facing and other sets 20 being rearward facing.

Suitable locations for video monitors 22 in accordance with the invention are at the junction of wall and ceiling of subway car 10, above the windows 14 and clear of

the doors 12. They are thus disposed opposite to sets of inward facing seats 16, and angled downwardly for ease of viewing of passengers 24 seated in such inward facing seats 16, as shown in Fig. 2, with direct sight lines 26, but visible to passengers seated elsewhere, and standing in the car 10.

Fig. 3 shows a detail of the car 10, at the location where a monitor 22 is to be installed. The car wall has an outer shell 28 in which windows 14 are sealingly mounted, and structural pillars 30 mounted at intervals and secured to the vertical structural member 32. Centrally secured to the exterior skin and body structure of body 34 of the car is a main air duct 36 and a housing 38 carrying ceiling lights 40 running substantially the full length of the car 10. The space between the ceiling housing 38 and the top of the pillars 30 is normally occupied by back lit advertising panels 40. Removal of appropriate portions of these panels 40 provides space for location of video monitors 22, according to the preferred embodiment of the invention.

Thus as shown in Fig. 4, the video monitor 22 is enclosed and rigidly mounted in its own enclosure 42, of stainless steel, rigid plastic or the like. The enclosure in turn is secured to the top of structural pillar 30 and the side of housing 38, in a space between the ends of illuminated panels 40, and protruding rearwardly to a position adjacent the outer part of the exterior skin and body structure 34. The front wall of enclosure 42 is comprised of a clear transparent polycarbonate shield 44, through which the screen 46 the monitor 22 is clearly visible. The screen 46 is angled downwardly for best viewing by a passenger 24 seated opposite. The enclosure 42 with monitor 22 therein and connections

protruding outwardly therethrough is removable as a unit, for replacement or service.

Fig. 5 shows a front, perspective view of the arrangement shown in section in Fig. 4. The monitor 22 and its covering shield 44 are recessed behind the upper portion of the adjacent advertising panels 40, and the sides of the enclosure 42 protrude inwardly from the lower portion of panels 40. This provides ease of access to the enclosure 42 for its removal when necessary.

An alternative arrangement is shown in Fig. 6. Here the polycarbonate shield 44 is convexly curved, and is disposed further forward from the monitor screen 46. The shield 44 now blends with top forward facing part 48 of the advertising panels 40, the exterior skin and body structure 34, to provide a perhaps more aesthetically appealing arrangement. In Fig. 7, there is diagrammatically illustrated the arrangement of Fig. 6 in practical operation. Poster-type illuminated advertisements are provided by advertising panels 40 flanking the video monitors 22, whilst the video monitor 22, disposed at intervals along the length of the car 10, show video information and/or advertising spots, at convenient, easily viewed locations and disposition to passengers riding in the car 10.

It will be appreciated that the specific embodiments illustrated and described herein are by way of example only, and are not to be construed as limiting on the scope of the invention. The description pertains specifically to the type of subway car currently in use in the Toronto Transit System, and illustrates a means and location for mounting the video monitors in such a system. Details of construction, and hence details of appropriate mounting for video monitors may differ

from subway system to subway system according to the form of car in use. Such mounting details do not depart from the scope of the present invention. For example, the screens of the TV monitors can be brought further forward from the positions illustrated, so that they are flush with the illuminated advertising panels or other items alongside them. This eliminates any obstruction of viewing of the screens from positions not directly in front of them. In all cases, it is contemplated that a plurality of monitors will be provided in each car, each rigidly mounted at a convenient location clear of the doors and windows, and at a disposition where it can be viewed by passengers riding the subway car, without difficulty. The provision of such video monitors mounted in their own enclosures as described herein, and faced with a transparent screen of, for example, polycarbonate, allows for considerable variation in the detail of mounting means and locations, to adapt them to different constructions of subway cars currently in use on different mass transit systems.

2025 RELEASE UNDER E.O. 14176

Applicant or Patentee: BLAIR, Scott Attorney's  
Serial or Patent No.: \_\_\_\_\_ Docket No.  
Filed or Issued: \_\_\_\_\_ BLASC/1A  
For: SUBWAY TV MEDIA SYSTEM

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY  
STATUS (37 CFR 1.9(f) and 1.27(b)) - INDEPENDENT INVENTOR

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled SUBWAY TV MEDIA SYSTEM described in

- ( ) the specification filed herewith
- ( ) appl'n. serial no. \_\_\_\_\_, filed \_\_\_\_\_
- ( ) patent no. \_\_\_\_\_, issued \_\_\_\_\_

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- ( ) no such person, concern, or organization
- ( ) persons, concerns or organizations listed below\*

\*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

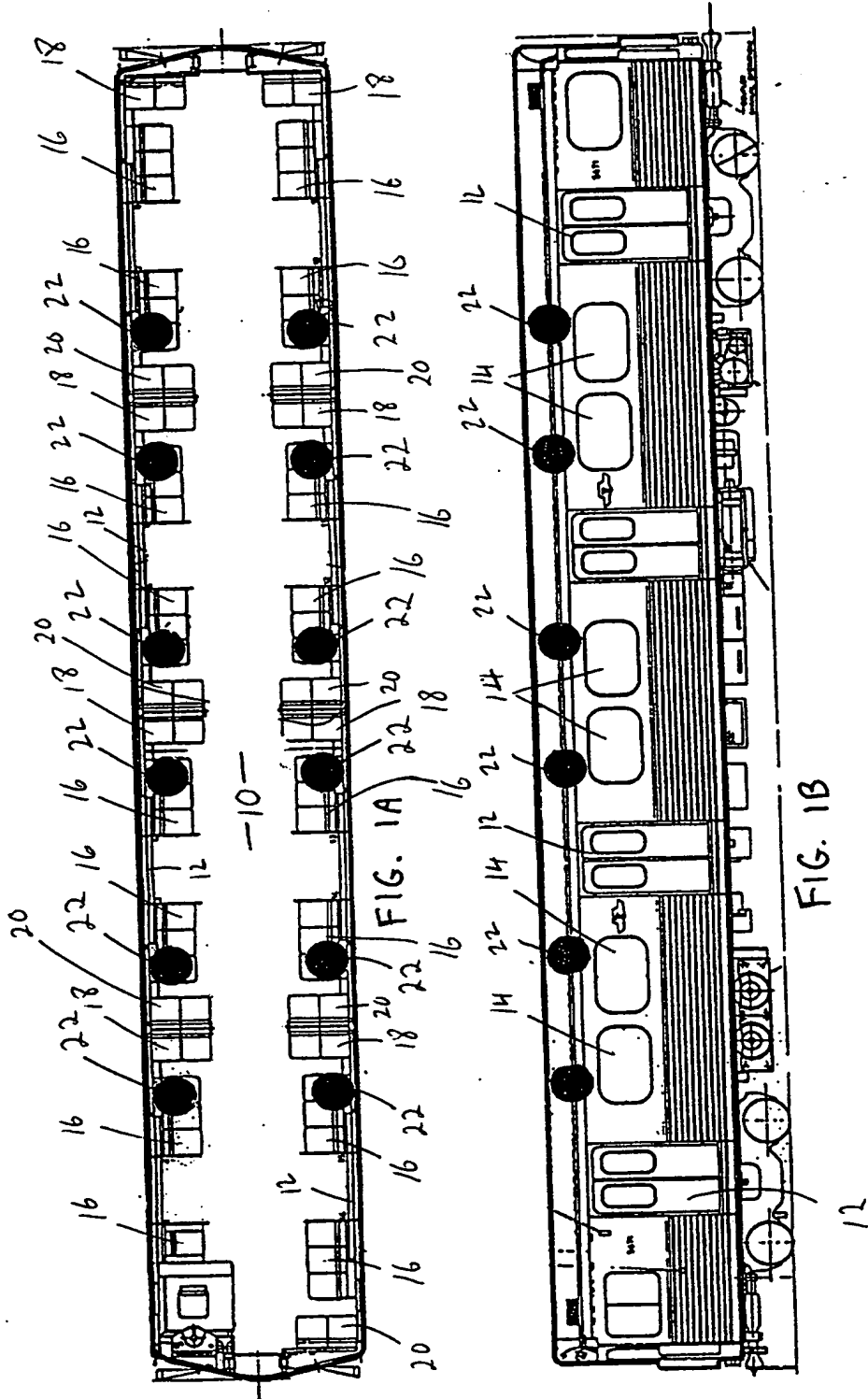
FULL NAME \_\_\_\_\_

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(X) INDIVIDUAL ( ) SMALL BUSINESS CONCERN ( ) NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b)).

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

SCOTT BLAIR

NAME OF INVENTOR

\_\_\_\_\_  
NAME OF INVENTOR

\_\_\_\_\_  
Signature of Inventor

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Signature of Inventor

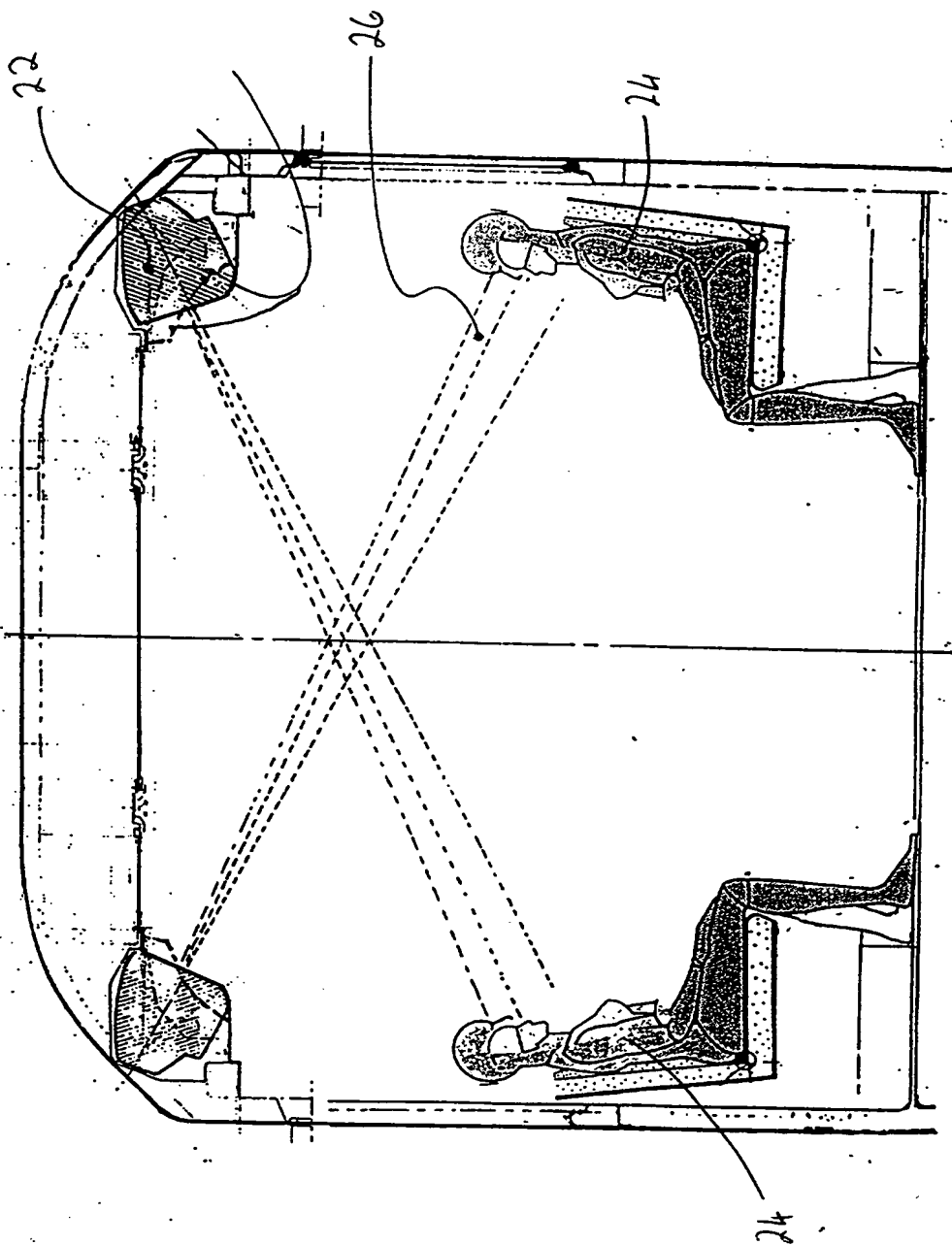
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FIG. 2



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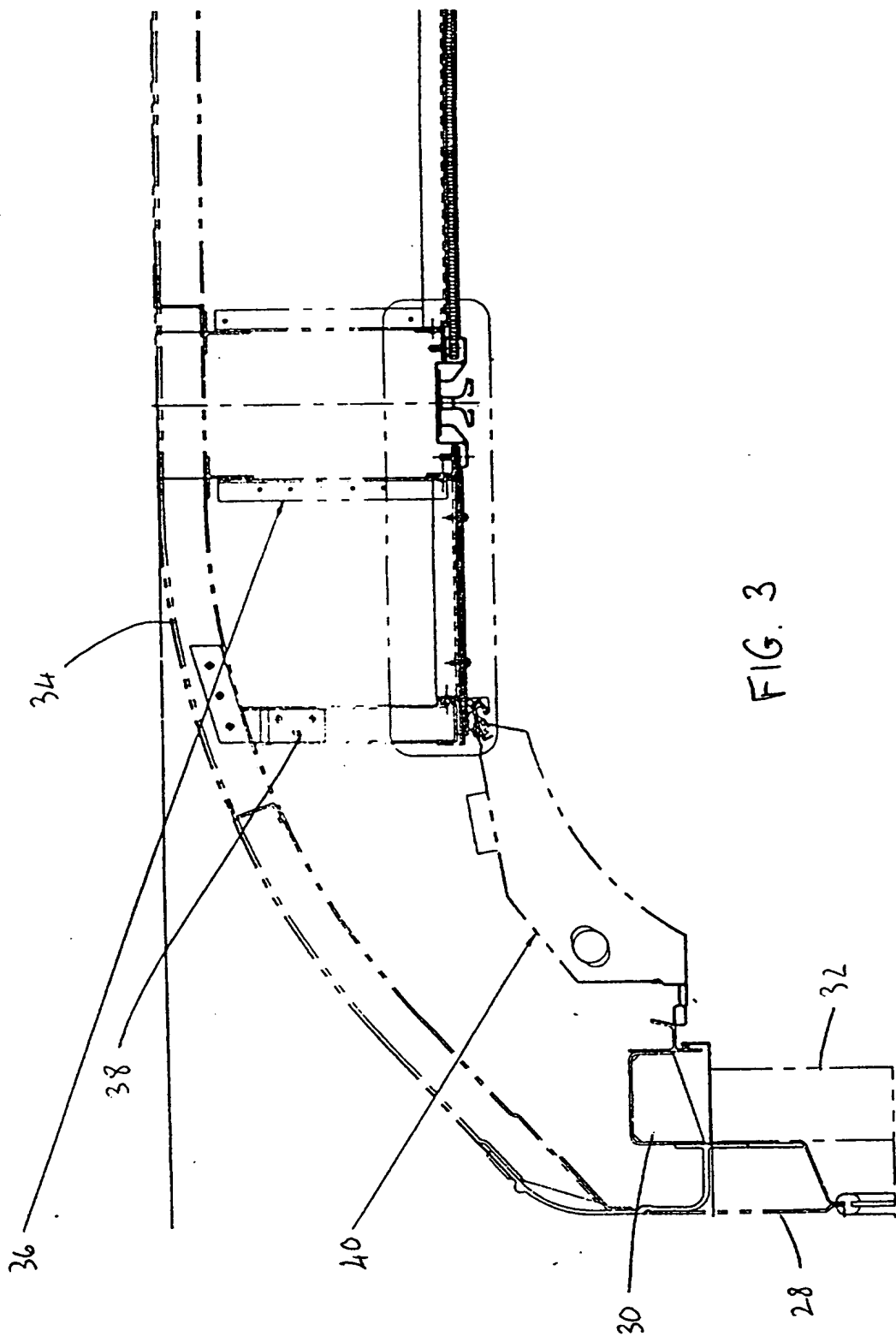


FIG. 3

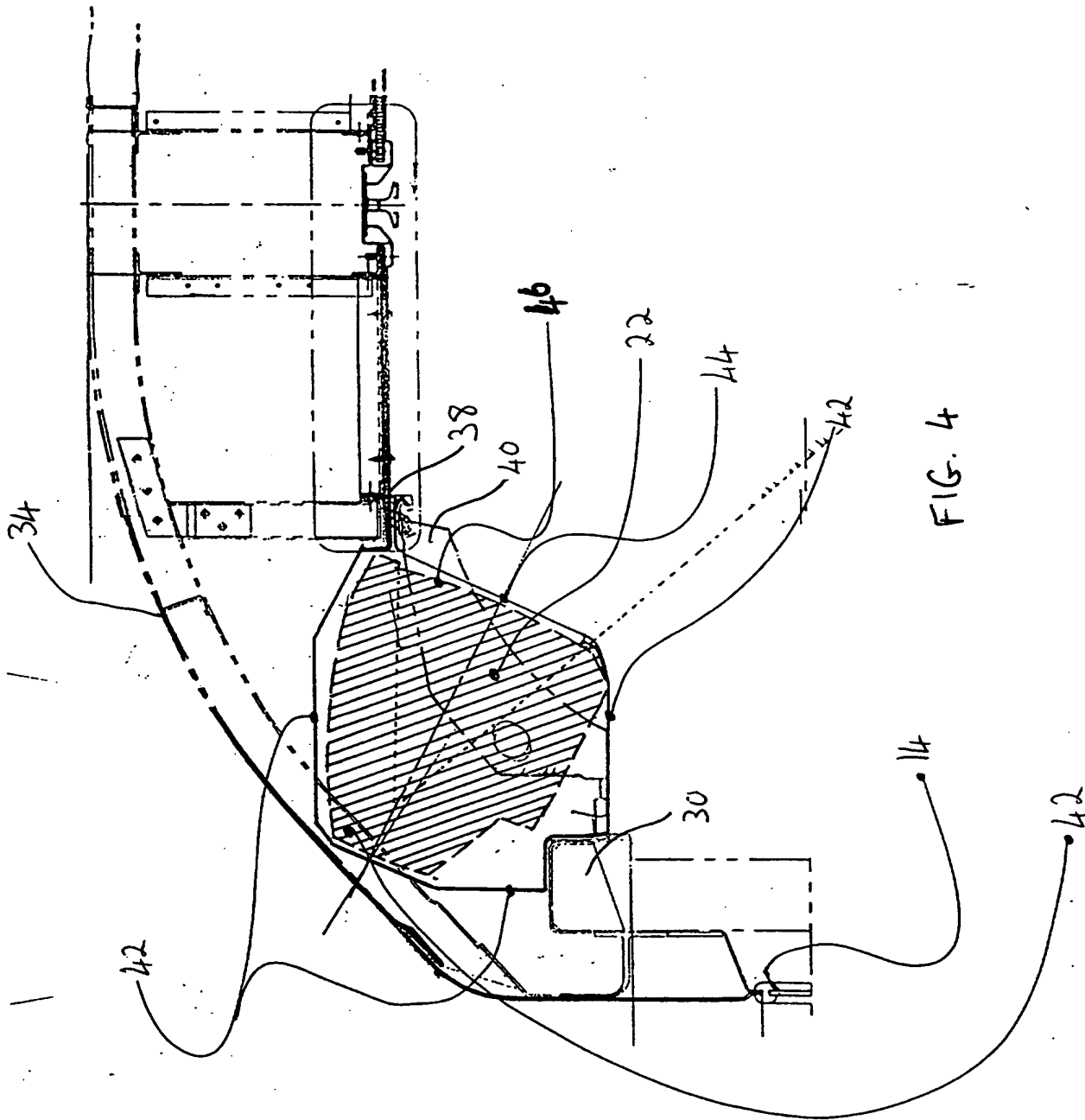


FIG. 4

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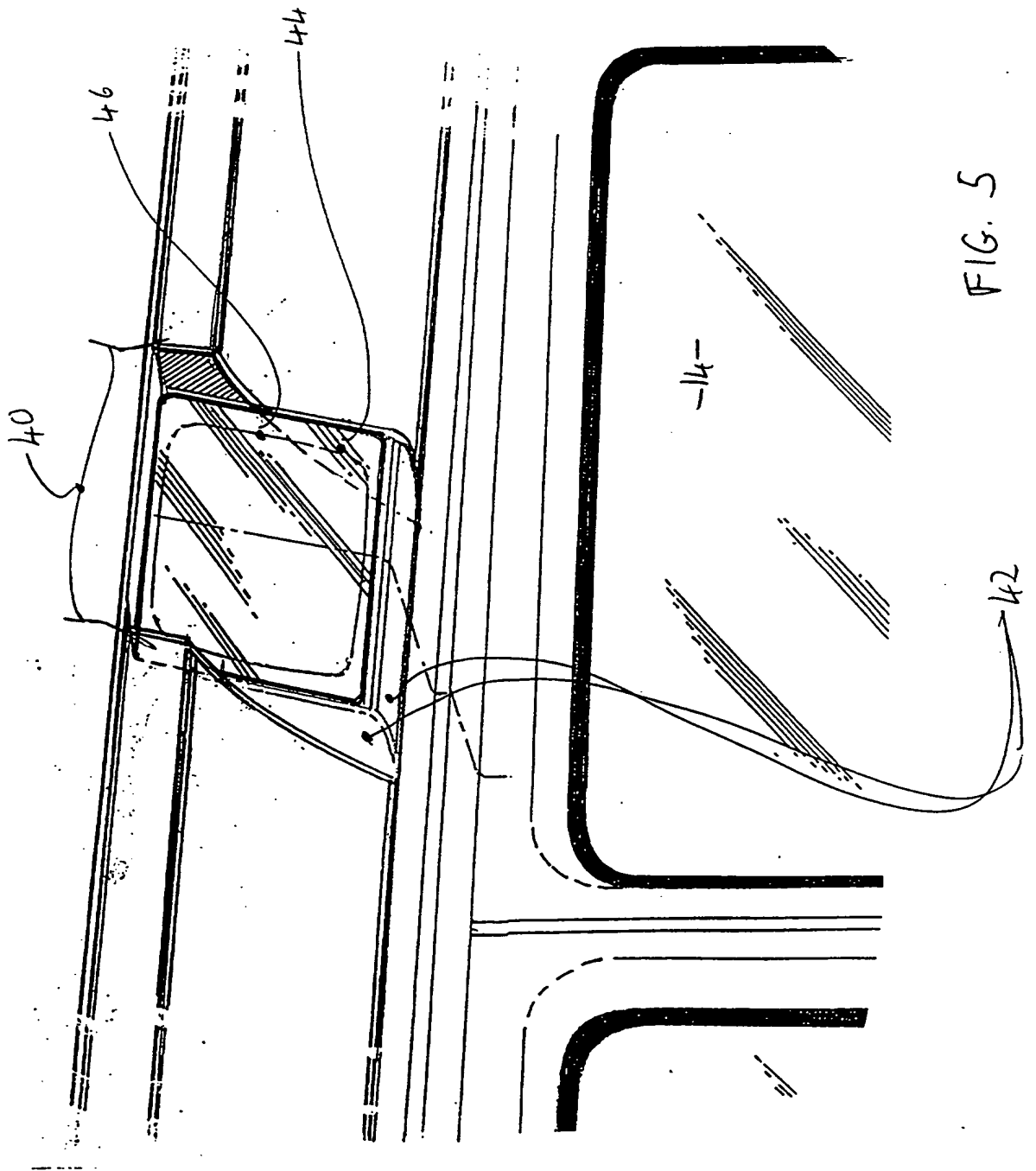


FIG. 5

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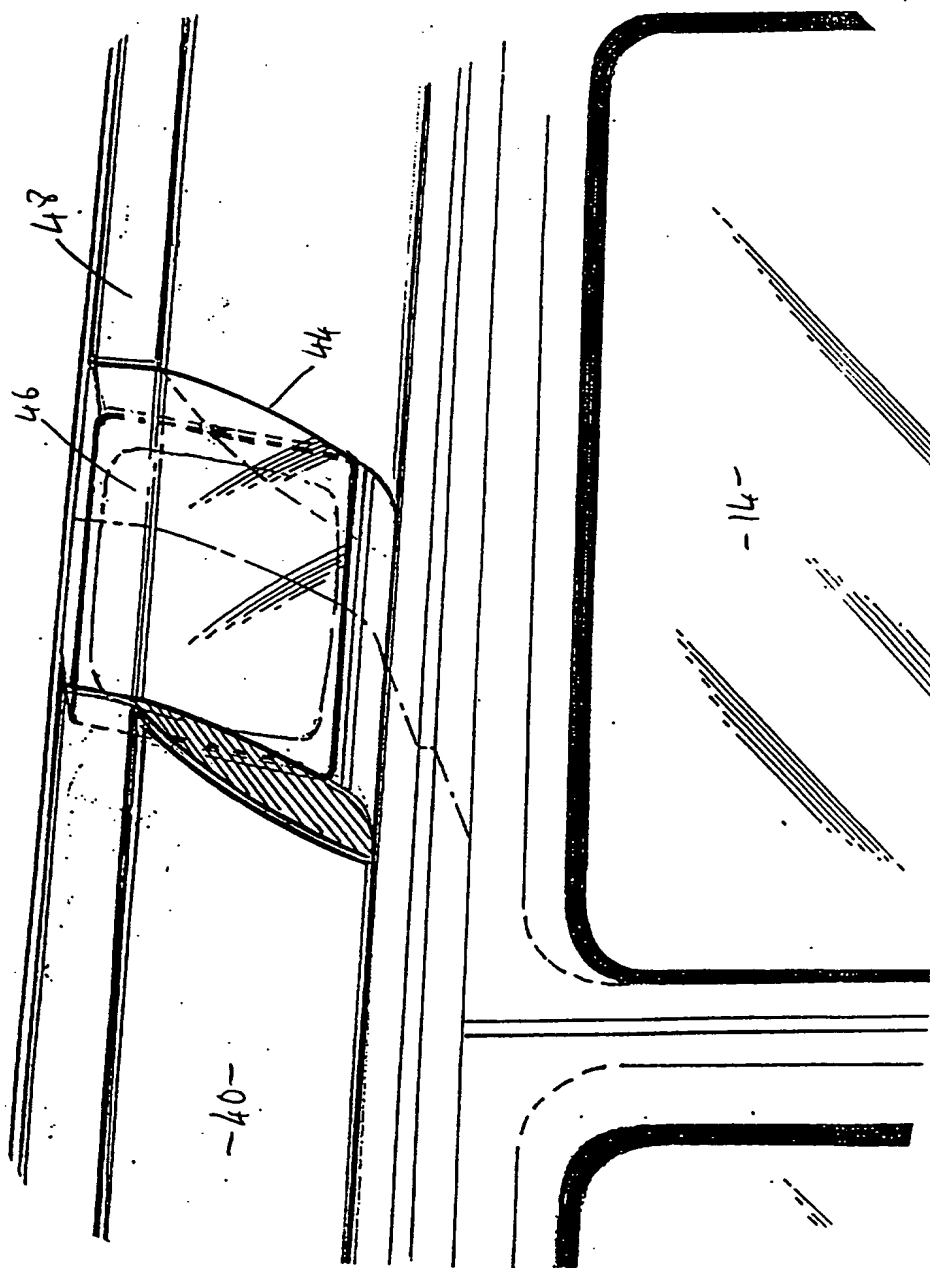
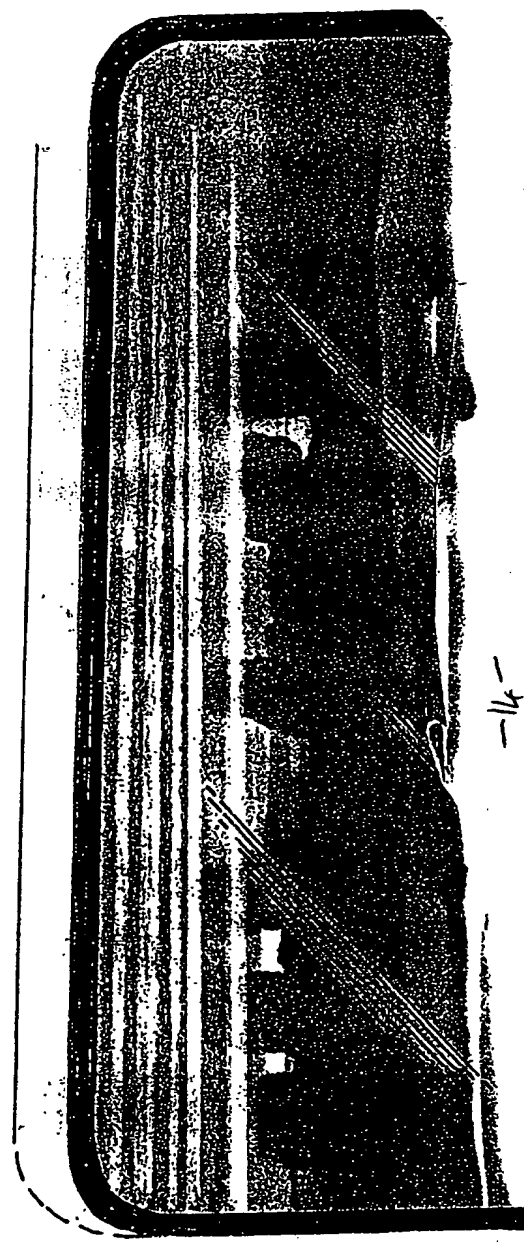


FIG. 6

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FIG. 7

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